

Occupational allergic contact dermatitis of the ears caused by thiurams in a headset

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doi:10.1111/j.1600-0536.2011.01950.x

Key words: contact dermatitis; headphones; headset; rubber; thiurams.

Thiurams are used as vulcanizing agents in rubber production (1, 2). They can cause occupational allergic contact dermatitis, especially in healthcare workers such as physicians and nurses, in food processors (e.g. cooks), and in professional cleaners (1). Office workers do not usually come into contact with thiuram at work.

Case Report

A 56-year-old female was referred with a 6-month history of recurrent eczema of the auditory canal and adjacent auricle (Fig. 1a). She had been working as a secretary for more than 30 years, and her principal duty was typing dictated letters. In this function, she wore a headset with white or black rubber ear olives for more than 6-hrs a day. The eczema healed spontaneously during holidays, but relapsed within several days after she returned to work. She reported some episodes of contact dermatitis after wearing costume jewellery and perfume as a teenager, but now avoided those items.

Patch testing with a Deutsche Kontaktallergie-Gruppe baseline series, rubber allergens (Allmirall Hermal, Reinbek, Germany) and her worn ear olives was performed. For patch testing, the ear olives were shaved and moistened with tap water. Allergens were applied on the upper back with Finn Chambers® on Scanpor® tape (Epitest, Tuusula, Finland) and Fixomull® stretch tape (BSN Medical, Hamburg, Germany), which were removed after 24 hr. Readings were taken on days 2, 3 and 4, according to International Contact Dermatitis Research Group guidelines. Positive reactions

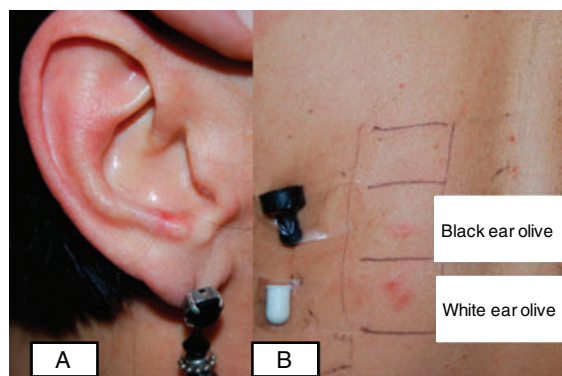


Fig. 1. Eczema of the auricle after wearing a headset with thiuram-containing ear olives (A); positive patch test reaction to the worn ear olives (B).

to the thiuram mix, tetramethylthiuram disulfide (CAS 137-26-8), tetramethylthiuram monosulfide (CAS 97-74-5), tetraethylthiuram disulfide (CAS 97-77-8), dipentamethylenethiuram disulfide (CAS 94-37-1), cobalt(II) chloride, nickel(II) sulfate, fragrance mix II and the white and black ear olives were observed (Fig. 1b). After replacement of the ear olives of the headset with ones without any rubber components, and treatment with a topical corticosteroid cream for 5 days, the eczema healed permanently.

Discussion

Thiurams are used as vulcanizing accelerators in the production of natural or synthetic rubbers (1, 2). Thiuram sensitization is usually acquired by the use of rubber gloves (3). Hence, thiuram allergy is predominantly seen in workers who wear latex or synthetic rubber gloves, such as physicians, nurses, food processors, and cleaners (1). The prevalence of thiuram sensitization in European countries is 1.7–2.4% (1, 4).

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Conflicts of interest: The authors declare that they have no conflict of interest.

The highest prevalence of contact allergy to a thiuram mix (7.41%) has been reported in rubber industry workers (1). The incidence and prevalence of thiuram allergy have been decreasing as a result of improved rubber glove production and gloves having barrier linings made of materials such as cotton (5, 6). Office workers and teachers constitute a population that is largely unexposed to thiurams and rubber products, as reflected by a very low prevalence of thiuram sensitization (1.25%) (1). The secretary described here developed allergic contact dermatitis caused by thiurams after more than 30 years of work, during which she was in contact with rubber

olives from a headset for at least 5 hr a day and 5 days a week. This agrees with the finding that the risk of thiuram sensitization increases with duration of employment (7). The patient did not report intensive contact with rubber in her private life, and nor did she wear rubber gloves. She did not have any eczema other than her ear eczema. Thiuram contact dermatitis involves the hands in approximately one-third of all cases (1). The presentation of this patient should remind dermatologists of the rare occupational cases in which thiurams may cause allergic contact dermatitis on the ears.

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